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(54) **COMMUNICATIONS NETWORK
INTERFACE FOR USER FRIENDLY
INTERACTIVE ACCESS TO ONLINE
SERVICES**

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patent shall be extended for 0 days.

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(63) Continuation of application No. 08/254,146, filed on Jun. 6,
1994, now abandoned.

(51) **Int. Cl.⁷** G06F 153/00

(52) **U.S. Cl.** 705/26; 705/27

(58) **Field of Search** 705/16.8, 17, 26,
705/34, 33, 37, 38, 27; 379/34, 74, 81-82,
93.12, 100.06, 100.14, 100.15, 106.09,
164, 204, 268, 88.17, 88.18

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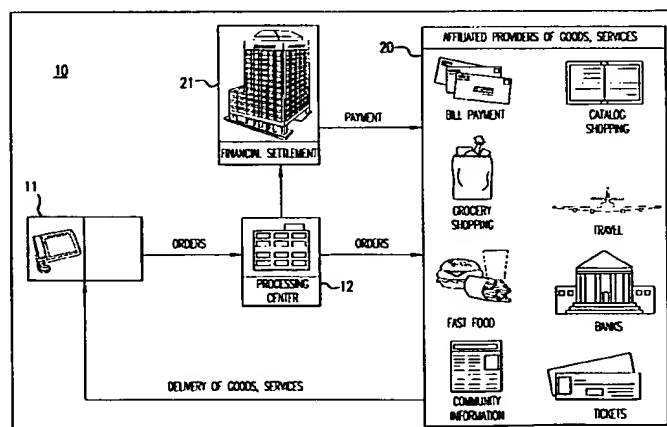
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Arthur LLP

(57) **ABSTRACT**

In a communications network for accessing an account,
conducting a transaction, obtaining services or obtaining
information from a remote location, a programmable user
interface is adapted to provide a multiplicity of separate
choices perceptible to a user on a user operable terminal. The
terminal is capable of registering for transmission to a
service platform, a user's input to the terminal correspond-
ing to at least one choice from the multiplicity, including
banking, bill paying, shopping, travel, flowers and gifts and
information. The user interface includes means for commu-
nicating the user selected choice to a service platform,
means for communicating by voice, TDD or data transmis-
sion through the service platform, and means in the terminal
for permitting the user to communicate directly by at least
one of an interactive voice, TDD or data transmission
communication with respect to a provider in the user's
selection from the multiplicity.

8 Claims, 11 Drawing Sheets



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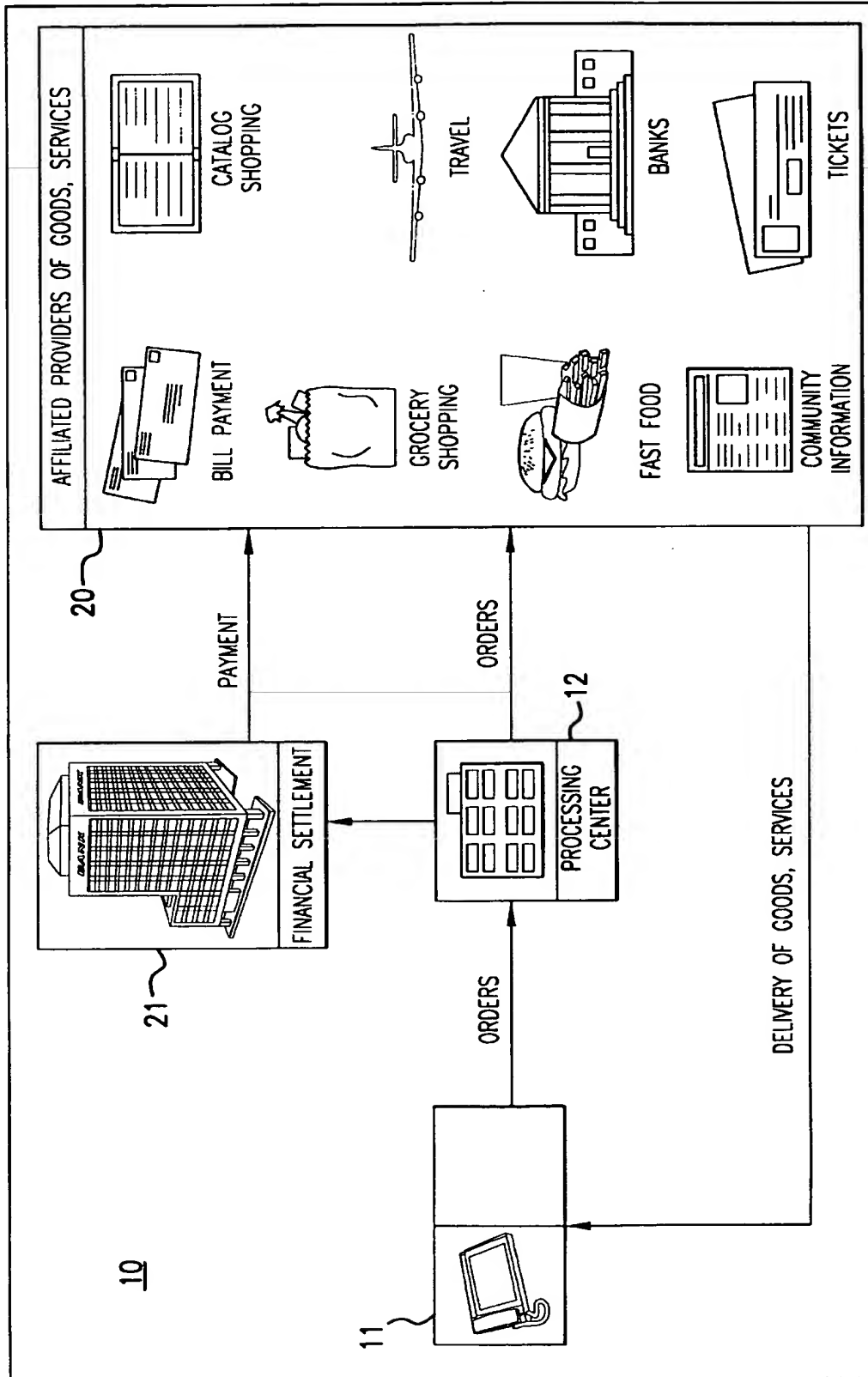


FIG. 1

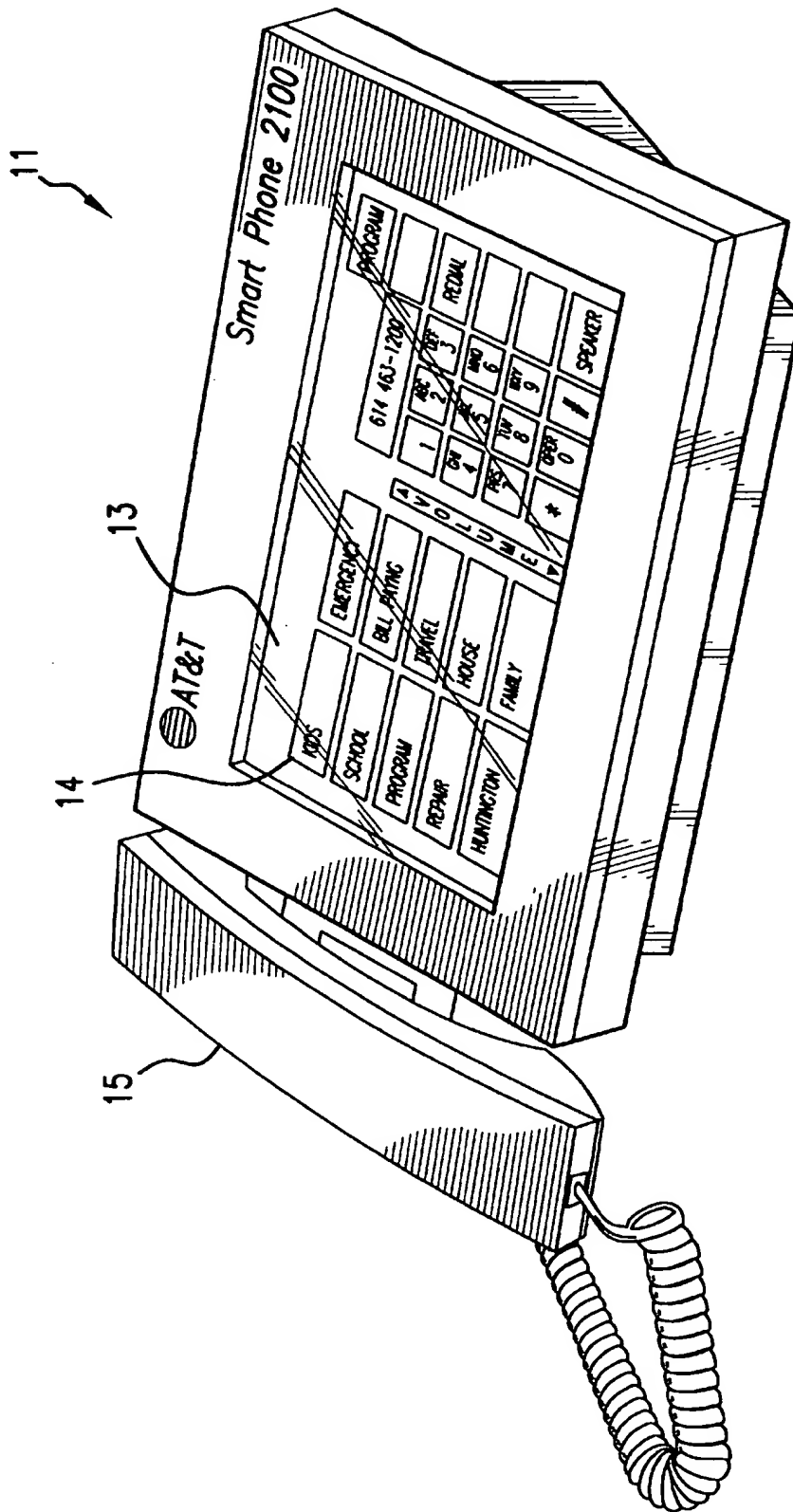


FIG. 1A

TOUCH BUTTON FOR DESIRED ITEM.

☐ NEW: BETTER RATES FOR
HUNTINGTON CUSTOMERS

OUR EXCLUSIVE
DIRECT ITEMS:

FIG.2

YOUR PERSONAL BANKER IS
JANE SMITH AT
614-555-1234

☐ NEW: BETTER RATES FOR
HUNTINGTON CUSTOMERS

FIG.3

BANKING— 7 ACCOUNTS
PLEASE SELECT ACCOUNT:
614-555-1234

<input type="checkbox"/>	CHECKING 1234-567890-1 HOUSE ACCOUNT	BALANCE: \$3,129.07	<div>▼</div>	<div>START OVER</div> <div>HANG UP</div>
<input type="checkbox"/>	MONEY MARKET 4567-890123-4 MY MONEY MARKET	BALANCE: \$2,545.10		
<input type="checkbox"/>	SAVINGS 5678-901234-5 TIM'S UNIVERSITY	BALANCE: \$2,529.07		
<input type="checkbox"/>	VISA REGULAR 1234-5678-9012-3456 JOHN'S CURRENT VISA			

HUNTINGTON
DIRECT

TRANSFER
FUNDS

FIG.4

CHECKING ACCOUNT # 1234-567890-1
HOUSE ACCOUNT

<div>LATEST TRANSACTIONS</div>	<div>LAST STATEMENT</div>	<div>START OVER</div>	<div>▼</div>	<div>DONE</div> <div>HANG UP</div>
CHECKING BALANCE:	3,129.07			
LAST STATEMENT DATE:	2/5/92			
LAST STATEMENT BALANCE:	2,501.31			
INTEREST RECEIVED THIS YEAR:	21.25			
INTEREST RECEIVED LAST YEAR:	105.54			
CHECKING RESERVE LINE OF CREDIT:	1,000.00			

HUNTINGTON
DIRECT

TRANSFER
FUNDS

FIG.5

INSTALLMENT LOAN # 12345678901
NEW CAR

INTEREST INFORMATION

LOAN AMOUNT 55,000.00
BALANCE: 29,129.07
TERM: 10 MONTHS
MATURITY DATE: 6/1/95
COLLATERAL: (COLLATERAL INFORMATION)
NEXT PAYMENT: 1/1/92
AMOUNT: 554.56

START OVER

DONE

HANG UP

HUNTINGTON DIRECT

FIG.6

CHECKING ACCOUNT # 1234-567890-1
HOUSE ACCOUNT

BALANCE INFORMATION

LAST STATEMENT

START OVER

4891	6/18	CHECK	50.00
4890	6/18	CHECK	7.54
	6/18	DEPOSIT	+238.50
4889	6/17	CHECK	29.44
4888	6/16	CHECK	322.00
	6/16	COLUMBIA GAS	60.00
	6/14	CASH-CLINTONVILLE	60.00
4885	6/14	CHECK	27.00
4884	6/14	CHECK	45.00

DONE

HANG UP

HUNTINGTON DIRECT

TRANSFER FUNDS

OVERDRAFT PROTECTION

FIG.7

TRANSFER FUNDS—
TOUCH BUTTON TO ENTER OR CHANGE
INFORMATION.

VERIFY THAT THE INFORMATION BELOW IS CORRECT.
PRESS DONE TO ACCEPT.

FROM	BACK
TO	
AMOUNT	DONE

FIG.8

BANKING—TRANSFER FUNDS
FUNDS TRANSFER HAS BEEN COMPLETED.

THE CONFIRMATION NUMBER FOR TRANSACTION IS
1234567890 PLEASE NOTE IT FOR YOUR RECORDS.

FROM: CHECKING	BEFORE: \$3,129.07
1234-567890-1	AFTER: \$3,079.07
HOUSE ACCOUNT	
TO: SAVINGS	BEFORE: \$300.00
7890-123456-7	AFTER: \$350.00
VACATION	
AMOUNT: \$50.00	DONE

FIG.9

STOP PAYMENT ON A SINGLE CHECK
TOUCH BUTTON TO ENTER OR CHANGE
INFORMATION.

VERIFY THE INFORMATION SHOWN BELOW. PLEASE
PROVIDE AS MUCH INFORMATION AS POSSIBLE.
PRESS DONE TO CONTINUE. PRESS BACK TO CANCEL.


CHECK NUMBER		BACK
CHECK DATE		
CHECK AMOUNT		
REASON		DONE

FIG.10

BANKING-PRODUCT & SERVICE
INFORMATION

CHECKING PLANS	SAVINGS AND INVESTMENT	EDUCATION PLANS	START OVER
RETIREMENT PLANS	TRUST PLANS	LENDING PLANS	BACK
PLAN 7-TO BE DETERMINED			
HUNTINGTON DIRECT			HANG UP

FIG.11

INFORMATION-CHECKING PLANS
FOR MORE INFORMATION, PRESS
HUNTINGTON DIRECT.

HUNTINGTON CHECKING PLUS:
A FULL-SERVICE, AFFORDABLE AND CUSTOMIZABLE
PACKAGE AT A SINGLE FEE.

HUNTINGTON PERSONAL INTEREST ACCOUNT:
UNLIMITED TRANSACTIONS, INTERESTS ON FUNDS
AND LITTLE TO NO FEES.

HUNTINGTON CLUB PLUS:
IF YOU ARE 55 AND UP AND WANT THE FULL
SERVICE THAT YOU DESERVE.

HUNTINGTON
DIRECT

DONE

HANG UP

FIG.12

"PERSONALIZE ACCOUNTS"-8 ACCOUNTS
SELECT ACCOUNT FOR NAME CHANGE.
PRESS DONE WHEN FINISHED.

<input type="checkbox"/>	CHECKING 1234-567890-1
<input type="checkbox"/>	CHECKING 2345-678901-2 JOHN'S TRAVEL
<input type="checkbox"/>	CHECKING 3456-789012-3 CARA CLUB ACCOUNT
<input type="checkbox"/>	SAVINGS 5678-901234-5 TIM'S UNIVERSITY

HUNTINGTON
DIRECT

TRANSFER
FUNDS

START
OVER

BACK

DONE

HANG UP

FIG.13

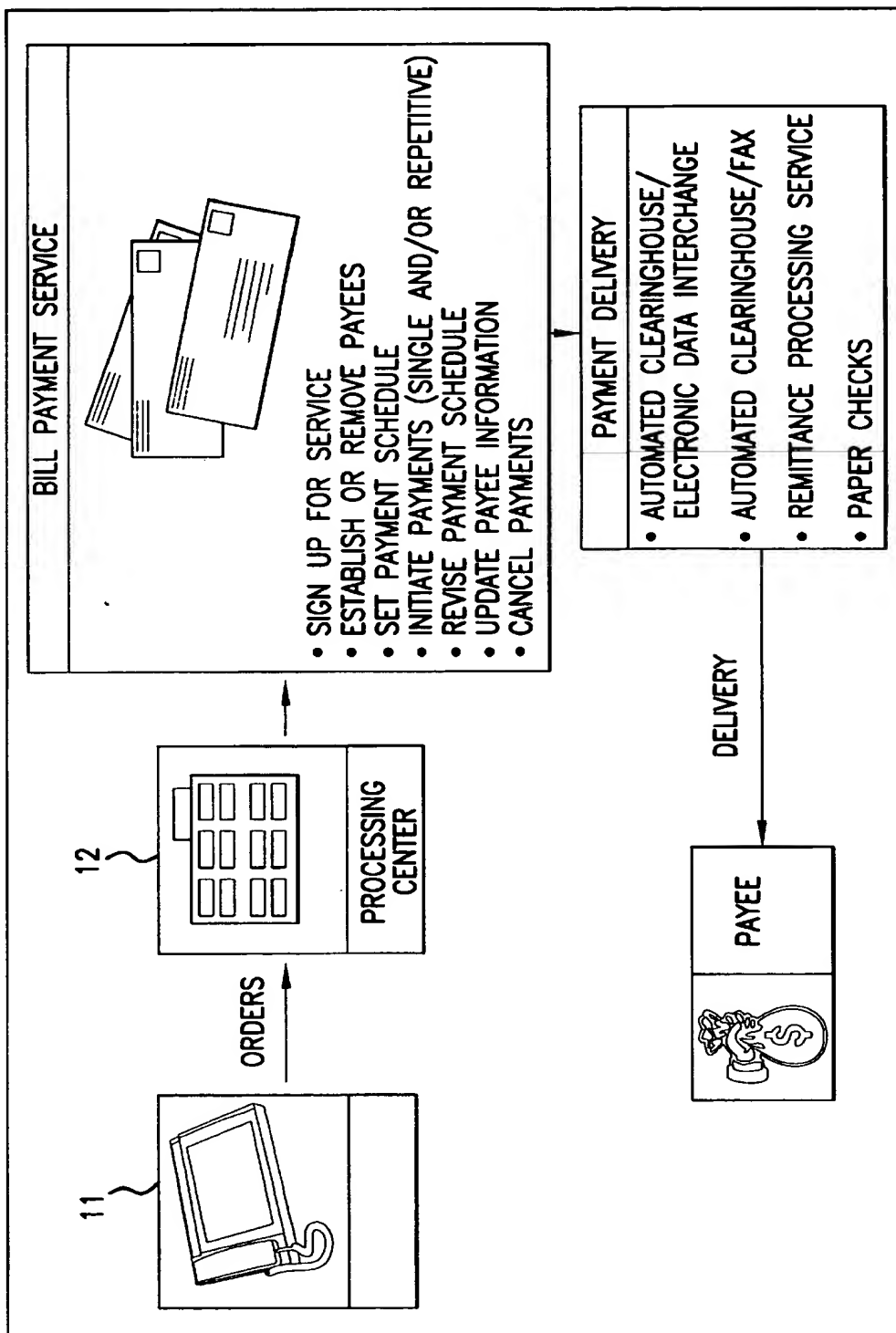


FIG. 14

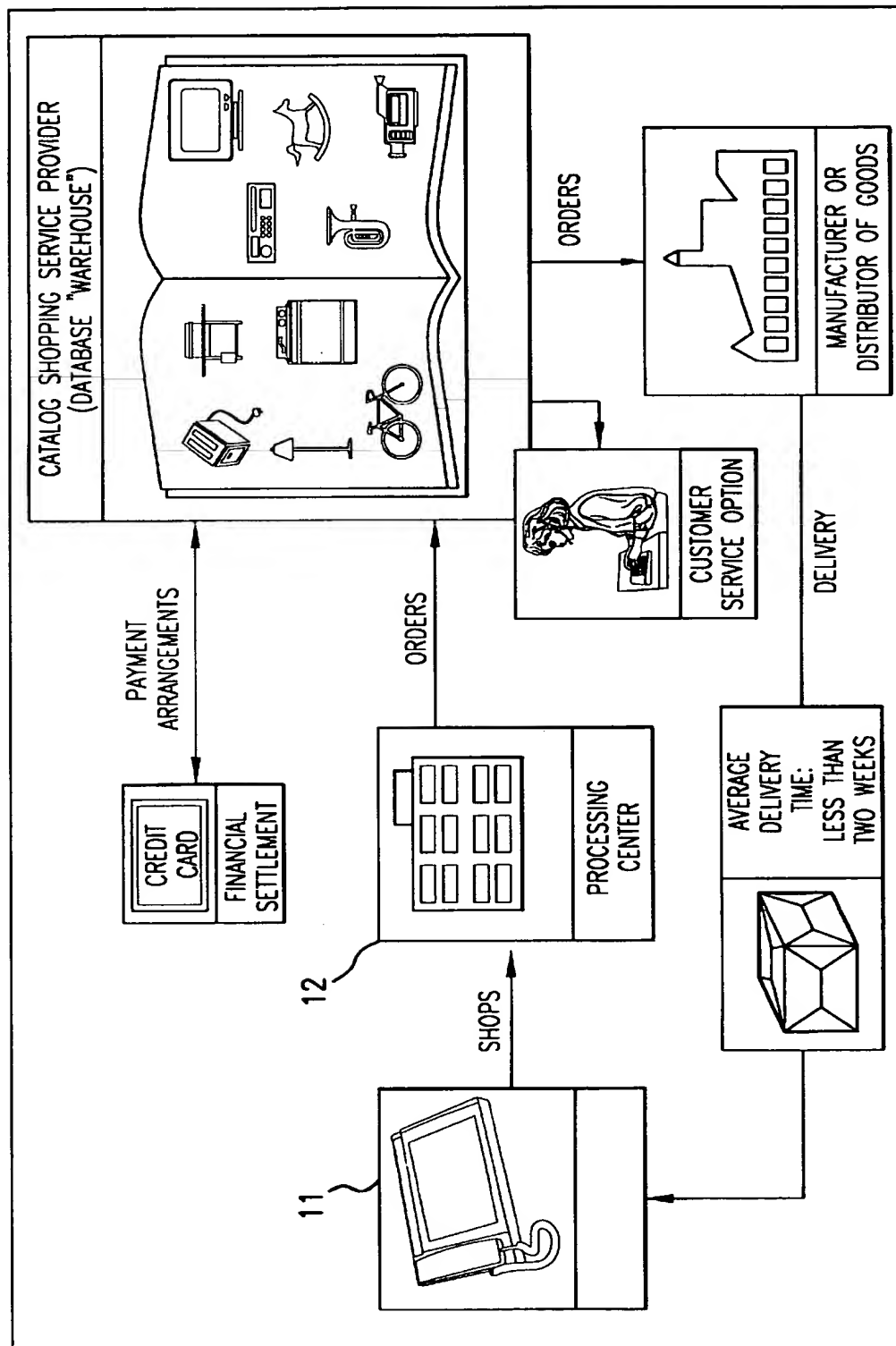


FIG. 15

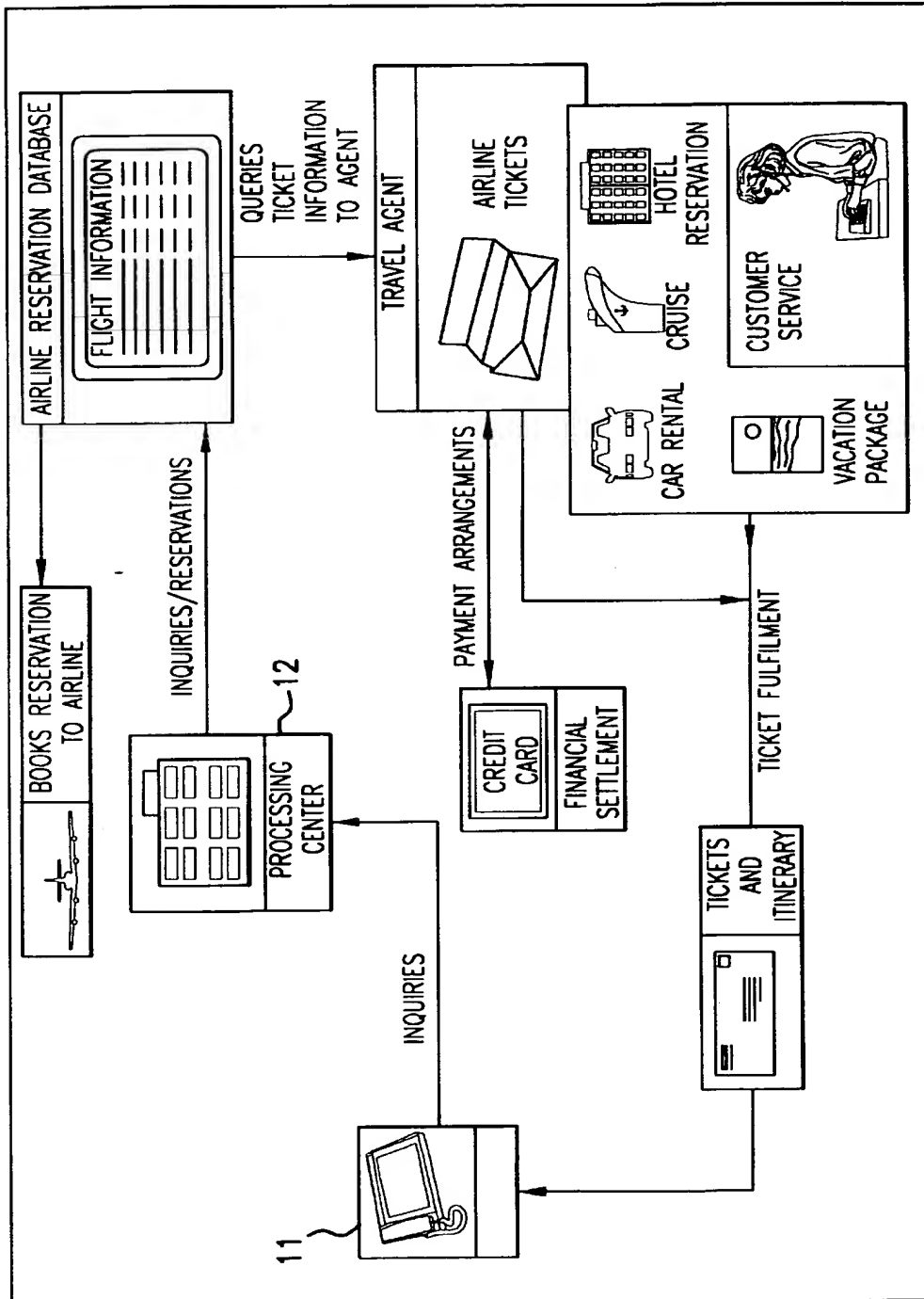


FIG.16

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COMMUNICATIONS NETWORK INTERFACE FOR USER FRIENDLY INTERACTIVE ACCESS TO ONLINE SERVICES

This application is a continuation, of application Ser. No. 08/254,146, filed Jun. 6, 1994, now abandoned.

FIELD OF THE INVENTION

This invention relates to a communications network designed to provide user access, presentation and gateway functions that permit a user to communicate with financial institutions and other providers of goods and services via an interactive telecommunications device, and more particularly, to a novel user interface at remote locations in the network for accessing services and information and for transaction processing.

REFERENCE TO APPENDICES

A listing of the source code used with the present invention is annexed as Appendix A.

BACKGROUND OF THE INVENTION

An increasing number of people are demanding more convenience to access various types of consumer services, including banking, bill paying, shopping, travel and others. Catering to the demand for added convenience in banking services are ATMs, direct deposit, and banking by telephone and mail. Personal computers have not been accepted as a convenient provider means for these services. Only a small percentage of the public have personal computers with modems, and even fewer have the capability to access any network platform offering banking services.

Marketing research has indicated a consumer demand for convenience-driven services delivered via a screen-based interactive telecommunications device or terminal, such as the telephone/modem or terminal device announced by AT&T and identified by the trade designation AT&T Smart Phone™.

There is a need for a user interface for such an interactive telecommunications terminal that will efficiently enable users to have access to many types of services from their homes or offices. The present invention provides such a user interface, which is supported by a service platform network, for communicating with a service provider, thus enabling users to have access to a large variety of services from a single location. Through the present invention, users can perform a multitude of transactions electronically via the terminal, such as banking, purchasing merchandise, making travel arrangements and paying bills, from the convenience of home or office.

SUMMARY OF THE INVENTION

The present invention includes a programmable user interface adapted to provide a multiplicity of images on a touch screen terminal to enable a user to select from multiple service functions, such as from a group that includes banking, bill paying, shopping, travel, gifts and information. The user interface generates displays for providing the user with an option from the group including transaction confirmation, error explanation, transaction repetition and user/provider voice communication.

The user interface interacts with a communications network for operating an account or conducting a transaction from a remote location. The present invention relates to a

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touch screen terminal at a remote location for sending and receiving communications, a service platform for processing the communications, and at least one provider of the account or transaction accessible by the service platform. The service platform includes an application processor with means for user selection of a category of services from a predetermined menu. A service provider can customize the menu of services for its users.

The terminal screen displays the data received from the service platform, which in a touch screen version includes virtual "buttons" touched by the user to continue the transaction as well as to provide directions for subsequent steps to perform the transaction. As referred to herein, a "button" is a relatively small area on the touch screen defined by a box or circle on a particular display of the present interface and which, when touched by the user, will initiate a request or cause a display to be shown on the screen. The flow of data from the service platform is managed to insure a rapid flow of screen displays on the terminal by prioritizing information that the user is most likely to use next. Once the transaction is completed, data about the transaction are sent to the service provider for logging.

In the present invention, a confirmation number is sent to the user's terminal when a financial transaction is successfully completed or an error message is sent to the user's terminal if a transaction is not successfully completed. The user can repeat a transaction or can be connected directly to a service representative upon request. If the user desires, a voice call, Telecommunications Device for the Deaf, generally known to the public by the historical acronym, and as consistently referred to herein as TDD or data transmission communication and a complete session log of the user's transaction sequence are sent to a customer service representative.

The user interface includes a security mechanism for preventing unauthorized access from the user interface to the network, including a user identification number, secret code and serial number of the terminal encoded in the transmission protocol from the user interface.

The present invention includes a method of providing services to a remote location. A user terminal for sending and receiving data communications is provided and interacts with a service provider computer for sending and receiving data communications. An intermediate service platform is operatively connected to the user terminal and the service provider computer. Requests for services from the user terminal are transmitted to the service platform which receives and processes the request and then sends the request for services to the appropriate service provider's computer. The service provider's computer then receives and processes the request for services in response to communications initiated from or sent to the user terminal and transmitted through the service platform. Responses from the service provider's computer, such as the generation of information and messages, are sent as a response to the user terminal. The response is displayed on the user terminal with instructions enabling the user to proceed with the request for services. Typical services provided include banking, bill paying, shopping, travel, flowers and gifts, and information.

The foregoing and other objects and advantages of the present invention will become more apparent when viewed in light of the accompanying drawings and the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a general flow chart showing the interrelationship of the functional and operational components with which the present invention is associated;

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FIG. 1A illustrates an embodiment of a terminal used with the present invention.

FIG. 2 shows an embodiment of a main menu of the present invention;

FIG. 3 shows an embodiment of a customized menu of the present invention;

FIG. 4 illustrates an embodiment showing a list of user's accounts;

FIG. 5 illustrates an embodiment showing the balance and overall status of an account;

FIG. 6 illustrates an embodiment containing information on an installment loan;

FIG. 7 illustrates an embodiment showing a user's most recent printed statement;

FIG. 8 illustrates an embodiment showing a list of accounts that the user can move funds from and to, along with an on-screen "form;"

FIG. 9 illustrates an embodiment showing a transfer confirmation number after funds transfer has been completed;

FIG. 10 illustrates an embodiment showing a stop payment "form" on a screen;

FIG. 11 illustrates an embodiment showing a list of the various types of accounts for which information is available;

FIG. 12 illustrates an embodiment showing a page of text with information about accounts;

FIG. 13 illustrates an embodiment showing a user's personalized account;

FIG. 14 is a flow chart of the bill paying operations of the present invention;

FIG. 15 is a flow chart of the shopping service operations of the present invention; and

FIG. 16 is a flow chart of the travel service operations of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In general, the present invention is a user interface for a communications network facility designed to provide access, presentation and gateway functions that allow financial institutions and service providers to receive, translate, process and send data between a user's terminal and their computer. The terminal may be any communication device that can receive and send electronic data communications, such as a combined telephone and modem device. The terminal is linked through telephone lines, X.25 packet or other public switched communication networks, to a service platform or network host, which translates protocol and relays the information onto the application processor or remote gateways for access to the service provider's computer.

The service provider's computer receives, translates, processes and responds to the user's commands and sends information back to the user through the network. All proprietary data are captured and retained on the service provider's computer. From the user's perspective, the service platform is invisible. Goods or services are delivered directly from a vendor, a financial institution or a service provider. When a user requests access to a service representative through the user terminal, the connection is made through the public switched telephone network to the service representative.

The service platform consists of a flexible hardware processing and application software environment governed

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by the UNIX operating system. The UNIX operating system is the resource manager supporting the multiple demands placed upon the service platform by multiple financial institutions and service providers. The service platform receives, translates, processes and sends data between a user's terminal and the computer of the service provider.

The present invention is a "user friendly" terminal interface. To access services, a user uses a "touch screen" which displays virtual buttons labeled with various functions, such as "Banking," "Bill Paying," "Shopping," and the like. When one of these buttons is touched, the terminal automatically dials the telephone number for the service platform using the public telephone network.

The interface responds to user requests, presenting the user with a choice of services. For example, a user who requests banking services chooses from a menu of specific services, including balance inquiry, transfers between accounts, transaction information, bill paying, and others. Directions appearing on the user's screen provide instructions for subsequent steps. To complete transactions requested by a user, the service platform accesses the computer of the service provider to obtain information regarding the user and the proposed transaction. Once the transaction is completed, the data are sent back to the computer for logging.

Access to services and information other than banking services is also provided by the terminal through the service platform. These services provided by affiliated organizations interconnected with the service platform include home shopping, entertainment and travel agents. To access these services, the consumer uses the terminal in the same fashion described above for financial services. The user interface shows the particular service provider's services and transactions. The service platform interfaces with the service provider's computer to access the requested information.

With the present invention, each service provider is able to customize the particular menus of services that it provides for its consumers. Users of the terminal are provided with three layers of security. Each transaction is identified by (1) a user identification number, (2) a secret code and (3) the serial number of the terminal. In this manner, user data are protected from unauthorized access, thus protecting the confidentiality and integrity of the data.

Referring now to the drawings, FIG. 1 is an overall flow chart showing, in general fashion, the interrelationship of certain functional and operative components of a communications network, generally designated 10, in which the present user interface may be employed. The services provided by the present invention operate through a combination of the capabilities of a telephone/modem or terminal 11 and a service platform or processing center 12, which will be typically owned and operated by the network provider.

FIG. 1A is an embodiment of a terminal 11 that may be used with the present invention. The terminal 11 is a combined telephone and modem that features a touch-sensitive liquid crystal touch screen display 13 with "buttons" 14 that the user touches to access services. The interactive touch screen display 13 is the user accessible aspect of the terminal interface with the service platform. Although a touch screen is the present preferred embodiment, the invention is adaptable to other technologies, such as audible read-out, voice-recognition, optical remote control, and the like. The terminal 11 may include a telephone handset 15 for voice communications. The terminal also includes a microprocessor that is internally programmable to provide the user interface displayed

on the screen and to interact with the service platform through modem communications according to protocol determined by the network provider for the service platform. The terminal also includes permanent and active memory for storage of the operating program and displays and for recording user input data, such as names, account identification, security codes and the like on display (or information) templates, and for recording a sequence of user choice selections for a historical record, or for use when a service representative is called or required. Source code for a representative program useful with an AT&T Smart Phone™ telephone/modem terminal is included herein at Appendix A, pages 2 through 73.

Thus, the user interface, in combination with the terminal 11, processes information in organized flows which provide access to a variety of information. In addition, the present user interface and the terminal 11 manage the flow of information from the service platform 12 to insure a rapid flow of "screens," prioritizing information the user is most likely to use next, based on the principles of human factors engineering. A sequential paging function in the flow of screens enables users to scan through descriptions of products and services. The paging display is essentially instantaneous because the terminal temporarily stores the relevant information retrieved from the service platform.

The UNIX system in the service platform 12 serves as the "manager" of all outside resources and coordinates a number of functions including scheduling and executing processes, performing inputs and outputs, handling interrupts, managing storage and monitoring the system. As such, UNIX communicates between the various types of computer hardware systems in place at a participating financial institution and any of a number of participating providers of goods and/or services 20. This flexibility enables the participating financial institution 21 and the service providers 20 to use existing computers to connect to the service platform 12 to offer products and services to users.

Typically the participating financial institution 21 interacts with the user by making the user's accounts available for informational and/or transactional purposes. The financial institution 21 is connected to the service platform 12 via one or more data and voice lines. Once the user sends the appropriate command, via the terminal 11 to the service platform 12, the user is then connected via a high-speed data transmission line to the computer of the financial institution 21 or other service provider 20. When a user initiates a transaction on the terminal 11, the service platform 12 relays the information to the financial institution's computer, instructing it to execute that transaction for the user. A connection to the service platform may also be provided using various X.25 packet assembler/disassembler equipment in a public or private network with the same functionality. A conventional software application environment connects the financial institution's computer 21 to the service platform 12 and also drives the terminal operation for users. Application development software packages may be customized to provide terminal users access to particular services and to optimally match the financial institution's banking service features and functionality. Bill paying services and related programming may be provided on a turnkey basis for both terminal and voice-response applications.

When a terminal user successfully completes a financial transaction such as a debit or credit to an account, a confirmation number appears on the screen 13, indicating the completion of the transaction. If the transaction was not completed successfully, an "error" message will appear,

instructing the terminal user concerning the reason the transaction was not completed. At this point, the user may choose to repeat the transaction or contact a service provider's customer service representative for clarification and assistance. For example, if the user were in the travel services menu, the service platform 12 would automatically launch a voice or TDD call to the travel agency's customer service department. A complete "session log" of the user's step-by-step transaction sequence as recorded in the memory of the terminal is immediately sent by the service platform to the service provider's customer service representative to assist in resolving the terminal user's inquiry. The service platform 12 also provides back-up customer service when the financial institution cannot directly resolve a customer inquiry while terminal users are linked to the selected service through the service platform 12. This link is "invisible" to users, who thus perceive their selected provider as offering the service.

The present interface presents the user with a number of options that are available with each of the services. The common options relate to security/identification, confirmation of transaction, error explanation, repetition of transaction, and customer service voice or TDD communication. These common options, as well as the options which are associated with a particular service, are presented as graphic and alphanumeric images on the terminal screen 13.

I. SIGN-ON

The user at sign-on is required to provide identification and other details before access to an account or other transaction is provided.

Users access terminal services by entering their user ID, which they keep confidential as a security precaution. PIN encryption with a secret code may also be used, thus providing another safeguard for terminal users. The service platform also provides an additional level of security by recognizing the unique identification of each terminal.

After accessing the terminal, users view a main menu, such as shown in FIG. 2, from which service options such as banking, shopping, and bill paying may be selected.

II. BANKING

When "Banking" is touched on one of the "sign-on" menu screens (FIG. 2), a menu of banking services, FIG. 3, appears on the screen.

The basic menu includes:

- Account Information,
- Transfer,
- Stop Payment,
- Information and
- Personalized Account.

This latter feature allows users to name an account (for example, "Mike's Checking," "Jan's Checking") to distinguish various accounts.

A customized menu tailored to the offerings of a particular banking provider may also be developed.

After a choice from the menu is selected, for example, when a user touches the "Banking" button appearing on the screen, the service platform retrieves a user profile stored in the financial institution's computer. This profile will usually include the user's name, listing of accounts and balances, and other basic data. The profile is stored in the service platform during the banking session to insure smooth and rapid flows of information.

As the banking session proceeds, the service platform/processing center (12 in FIG. 1) moderates the flow of information between the user's terminal and the financial institution's computer. If account information that is more

detailed than that included in the user profile is needed, the service platform accesses the financial institution's computer to retrieve the necessary data.

If a user desires to know the balances of various accounts, he or she chooses the "Account Information" service from the banking menu (FIG. 3). Next, a list of user's accounts appears on the screen, including checking, savings, CD's, money market accounts, installment loans and other. The accounts may be listed by number or by a name as chosen by the user. Each account will have a button beside it, as shown in FIG. 4.

Once the user chooses the account to review, the balance and overall status of that account appears on the screen. An example of this screen is shown in FIG. 5. The type of information will vary according to the type of account. For example, for a checking account, the information includes the balance, last statement date, interest received and checking reserve available (overdraft protection). By comparison, the information on an installment loan includes: loan amount, balance, term, maturity date, collateral and next payment date. An example of a screen containing the information on an installment loan is shown in FIG. 6. The user may make payments on the installment loan through the bill paying service of the present invention.

By touching the button marked "Latest Transactions" at the top of the screen shown in FIG. 5, the user can review account history. The amount and type of information available varies according to the type of account. For example, by touching "Latest Transactions" for a checking account, a user can review all transactions since the last statement. By next touching "Last Statement," the user can review the most recent printed statement received, as shown by the example of FIG. 7.

The user has the option to move back and forth between the "Latest Transactions" and "Balance and Status" screens at any time. To exit "Account Information," the user either touches "DONE" at the end of a transaction, which returns the screen to the Banking menu, or the user touches "Start Over," which returns the screen to the main menu.

A user may also transfer money between accounts by pressing the "Transfer" button in the Banking menu. Next, the screen will feature a list of accounts that the user can move funds from and to, along with an on-screen "form" which asks "From Account," "To Account," and "Amount," as shown in FIG. 8. Once the user fills out the form using the subject display, the next display will request a confirmation. To do so, the user presses "DONE." The next display, FIG. 9, provides a transfer confirmation number, which the user should enter into a check register. When the user touches "DONE" again, the screen returns to the banking menu.

With reference to FIG. 10, if a user needs to stop a payment, the appropriate display prompts the user to specify the account. Next, the display provides a message explaining the fee for the service. The present interface prompts the user to complete a "form" on the screen which includes the check number and, if possible, the dollar amount and the reason. Once the form is complete, the user presses the "DONE" button and the request is entered. The screen next provides a disclaimer about the terms and conditions of the transaction, explaining that the stop payment order will be placed within 24 hours and that the stop payment cannot be enforced if the check has already been cashed. When the user again presses "DONE," the screen returns to the banking menu. Upon registration of the stop payment instruction at the financial institution, the user will receive via mail a form from the institution which must be completed and returned to confirm the stop payment order. The same

procedure is necessary if the stop payment order is made verbally over a conventional telephone.

Users can review an electronic "catalog" of the financial institution's products and services by pressing "Information" on the main banking service menu (FIG. 3). The information appears in pages of text, which the user can scan by "paging through" the material. FIG. 11 shows the first screen which lists the various types of accounts for which information is available. The terminal and service platform are designed to manage the flow of multiple pages of text so that moving from page to page is easy and essentially instantaneous. An example of a page of text is shown in FIG. 12. If a user wishes to open an account, he or she presses the "Huntington Direct" button and is connected by voice, TDD or data transmission communication to a customer service representative. The customer service representative will open the account, as requested. This voice, TDD or data transmission communication option may be chosen from any screen or menu.

The programmable aspect of the user terminal also allows users to personalize the name of accounts for easy recall. For example, different savings accounts might be labeled "Eric's College Fund" or "Vacation Account." After an account is personalized, the detailed information regarding these accounts can be accessed by the user. If a user wants to personalize his or her account, he or she presses the "Personalized Accounts" button, and a list of all accounts appear on the screen (FIG. 13). Next, the user touches a button beside the account to create a customized name. A "keyboard" appears on the screen asking the user to enter the new name for the account. The user enters the information and the terminal asks for a confirmation. When the user presses "DONE," the screen returns to the list of accounts and the new personalized name appears on the screen. Once the user confirms the name, it appears under the user-selected name whenever that account appears on a terminal menu. If the user wishes, the personalized name appears on printed statements. When the user presses "DONE" again, the screen returns to the banking menu.

When a user pays a bill using the terminal bill paying service, the bill paying service asks the banking service to verify if there are sufficient funds. Further, the bill paying service updates the user's information in the computer when a bill is paid. The transaction is memo posted so that the funds are not available. The user will see the updated balance on the terminal on the morning after the next business day.

In accordance with the present invention, on nearly every screen, the user has the opportunity to press a button to reach a customer service representative from the user's financial institution. Once the user confirms the request for personal service, the banking session ends, the data link to the service platform terminates, and the service platform dials the financial institution's customer service center.

III. BILL PAYING

The user interface offers different access methods including terminal and automated voice response (AVR) applications accessed using conventional telephone networks. FIG. 14 is an overall flow chart of bill paying operations. When the bill paying service is accessed by the terminal, access to the service platform processing center is similar to that stated above, with the user accessing the system with an account number and PIN. Access procedures for voice response users are determined by individual financial institutions. Voice response users may access the bill paying service through the service platform using a regular touch tone telephone, rotary dial telephone, or voice recognition

technology. Many of the advanced features of the service platform bill paying service are available to voice response users as well as to users using a terminal. Financial institutions may choose to offer both AVR and terminal access so that customers can access bill paying capabilities in either mode.

The system architecture of the service platform allows users to move from service to service without re-entering their identification number and PIN. Once the terminal user accesses the bill paying function, the following procedures occur:

- (1) The service platform communicates with the computer of the user's financial institution to identify the terminal user's profile, which includes payees and accounts.
- (2) The user may add, delete or change payees, schedule, reschedule or cancel future payments, or inquire about previously made payments.
- (3) Each time a payment is made or a payee is added or modified, the information is sent to the service platform. The user is provided with a confirmation number for financial transactions, which serves as a "receipt."
- (4) Upon completion of all bill-paying transactions, the terminal user touches "DONE" and the platform terminates bill-paying activities. The user is returned to the main services menu display, where they can choose additional services. When "DONE" is touched again, all transactions are completed.

To establish the electronic bill paying service, terminal users that are customers of a financial institution sign up for bill paying services using their terminal display. Voice response users follow procedures established by their financial institution, using the mail or conventional telephone. Terminal users can add, delete and change information regarding businesses which participate in electronic bill-paying, without the need for access to a customer service representative. Users can make payments to any individual or business, meaning that their electronic transactions will serve as a complete "checkbook." After each payment, users are provided with a confirmation number which serves as a receipt. Terminal users will see the number on their display, while voice response users will hear the number.

Users can set up, change or delete a schedule of recurring payments for the same amount and account on a specific date. Users can receive information on the last two payments made to each payee, either by terminal display or voice response. Furthermore, users can view their personal list of payees at any time.

The service platform bill paying system offers functions and services which enhance user convenience. These include:

- (1) Payee Subtitle. Users may establish a personalized subtitle for each payee, such as separate credit card accounts for spouses with titles such as "Credit Card, Liz," and "Credit Card, Andy." Terminal users may establish such subtitles using their screen. Voice response users can call or write their financial institution.
- (2) Instant Payee Startup. Through a selected display in the present interface, a user may establish a new participating payee and immediately authorize a payment.
- (3) Payee Search. This terminal function enables users to view a master list of participating payees and quickly punch an access code for convenient access to frequently used payees.
- (4) Payee Search-by-Category. This function permits users to view participating payees in pre-defined categories (utilities, credit cards, etc.). This is useful when establishing new payees in a user's personal list.

(5) List of Upcoming Payments. Users have access to present and future scheduled payments, either via terminal display or voice response listing.

(6) Multiple Funding Accounts. All users are able to debit any of their accounts even at different financial institutions to fund payments. This flexibility simplifies finance management.

(7) Expected Funds Delivery Date. Each transaction confirmation includes the average number of days before the payee receives the appropriate funds, based upon the remittance method used.

The service platform bill paying system uses electronic networks whenever possible to make payments convenient for the payee and the user. Typical networks available include: (1) Automated Clearinghouse and Electronic Data Interchange (ACH/EDI) using the automated clearinghouse to send debits and credits, with remittance information transmitted in EDI format;

- (2) Automated Clearinghouse Facsimile (ACH/Fax) which will also send a credit via the ACH system and send remittance information to payees via fax; and (3) MasterCard's Remittance Processing Service (RPS) that allows electronic transmissions of payments and remittances to be delivered to an already established payee base. Other methods may be added to provide flexibility to the financial institution to customize a package which meets local needs. For example, a major local department store could set up an automatic payment account. Whenever electronic means cannot be used, the bill paying system creates paper checks and mails them to payees.

The electronic bill paying portion of the service platform may be driven by a customized version of Personal Transaction Teller (PTT), a bill paying software package that is proprietary to The Huntington National Bank, Columbus, Ohio, or other appropriate types of bill paying software packages. In addition, the financial institution's customer service representative will have immediate access to bill paying information, in many instances enabling representatives to resolve inquiries while the user is on the telephone. The service platform maintains records of, and reports the standards of customer service to the financial institution on a regular basis. Measurable service standards that are monitored and reported include total time of error resolution, total number of user inquiries, and ratio of problems to total transactions.

IV. SHOPPING

The present interface allows terminal users to enjoy the convenience and control of shopping with participating suppliers at home, 24 hours a day, 7 days a week. Users of the system are provided with catalog shopping services. The "catalog" is a data base organized by product categories and types, enabling users to shop for items by department, as they would if they were in a major department store. The data base is updated frequently to incorporate the most popular items for terminal users. Examples of the type of merchandise available through the catalog shopping service are electronics, appliances, toys, luggage, home furnishings, jewelry, and the like.

As illustrated in FIG. 15, the terminal user accesses the catalog shopping service through the service platform. Using the appropriate displays of the present interface, users are guided through the shopping options by on-screen directions. As the terminal user touches buttons on the screen, the service platform routes information, enabling users to make price comparisons and order the latest merchandise quickly and easily. Terminal users use the catalog shopping services by following the procedures outlined below.

- (1) Select "Catalog Shopping Service." From the main shopping display menu, the user selects "Catalog Shopping Service."
 - (2) Choose Shopping Option. The terminal user chooses from three options:
 - (A) "Best Buys" Category. Users can shop for merchandise by browsing through the service's most popular product categories. Upon entering "Best Buys," the display prompts users to select a category of merchandise, such as "Stereo Equipment." The next step is a selection of a specific type of product within those categories, such as "Cassette Players" or "Portable Radios." Once the selection is made, the user views a choice of manufacturers and models. The user can "page through" listings, which include a brief description, manufacturer's suggested list price, the price available to terminal users, and the cost savings associated with making the purchase through the service platform. Further, the user can access more detailed product descriptions by touching the appropriate "button." Once the user has made the selection, the order is placed directly from the "Best Buys" category.
 - (B) Order by Model Number. Comparison shoppers, who have researched the product and know its brand name and model number, can enter the model number to retrieve the product's catalog listing. The listing states the manufacturer's suggested list price compared to the price available to terminal users.
 - (C) "What's New?" This terminal feature informs users of new merchandise available through the catalog service. Other shopping options may allow users to select a specific manufacturer, price range or product feature and review all products included in the catalog which fit the user's needs.
 - (3) Order Merchandise and Arrange for Payment and Delivery. Once the purchase decision has been made, the terminal user presses "Order This," along with the product identification number, price, quantity, size, color and other specifications as appropriate. When prompted for payment, the user enters his or her credit card number and expiration date. The service platform verifies the information to insure the card number is valid. When the user places an order, the service platform retrieves basic user information from the financial institution's computer, such as name, address and telephone number, for billing and shipping purposes. The user confirms the order and shipping/billing information as prompted on the screen display and the order is placed. Most merchandise orders are sent instantaneously via electronic data interchange to the appropriate participating vendor that ships the order in accordance with instructions provided by the user through the terminal interface.
 - (4) Exit Shopping Service. Upon completion of the catalog shopping transaction, the terminal user touches "DONE" on the screen and the platform terminates the catalog shopping activities. Then the user is returned to the main services menu display.
- At any time while shopping through the terminal, the user can choose to speak to a customer service representative of the catalog service provider by touching the appropriate screen button. This disengages the on-screen shopping session and automatically dials the catalog vendor's service department. The user can then inquire about the status of an order, check on the availability of items or receive assistance in locating an item.

Catalog shopping requires the same access to the service platform established with bill paying or banking services.

V. TRAVEL

FIG. 16 is a general flow chart of the travel service operations of the present invention. Airline reservations and other travel services are available through the present interface.

The service platform provides a link between the terminal user and an airline reservation system. The participating service provider travel agency handles ticket fulfillment and customer service. Users can make domestic airline reservations directly, without contacting a customer service representative or travel agent, thus the result will be increased consumer control and convenience. To arrange a flight, the user: (1) selects the displayed menu button to access "Travel" services; (2) enters the city of departure using the display relating thereto; 3) enters the destination; and 4) enters the desired date and time of departure or arrival.

The interface will ask questions necessary to clarify any ambiguities. For example, if the user enters "Columbus," the screen will ask "Columbus, Ohio or Columbus, Ga.?" The user will provide the same information regarding the return trip. The service platform uses this information to access an airline reservation data base which contains domestic flight information. The service platform gathers information on all available flights which meet the user's specifications, and the present interface displays them on the user's terminal screen.

A user can establish a travel profile through the present interface that includes basic information such as seating preference and frequent flyer account numbers. This enhances convenience by allowing the user to bypass routine booking information.

The interface also prompts the user regarding the need for hotel or car rental reservations for the trip. These arrangements can be made by touching an appropriate screen button. Cruise and package vacations also can be booked by connecting directly to the service provider's travel consultants. Once the user has made final choices, the interface to the reservation system books the reservation and queues the ticket to the service provider travel agency, who mails or delivers the tickets to the user.

VI. FLOWERS AND GIFTS

The present interface may provide the user with the ability to send flowers and other items to designated recipients, along with standard or original messages. Displays are provided for entering the name and location of the recipient. Additional displays are provided for selecting the desired type and quantity of flower or other gift. Pricing and availability, and shipping information are also provided by the present interface. Order review, order confirmation, billing information, credit card information appear in sequential fashion.

The present invention may also be used in conjunction with commercial applications that include services for businesses. These services may include general banking services such as bill paying, an "electronic checkbook," payroll applications, credit and loan-related services, investment services, tax services, information services such as credit bureau information, reference services, and a community calendar.

Entertainment services can be provided which enable the terminal user to order a wide range of items such as event tickets, flowers, and make restaurant and hotel reservations.

Having described the invention in detail, those skilled in the art will appreciate that, given the present disclosure, modifications may be made to the invention without depart-

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ing from the spirit of the inventive concept herein described. Therefore, it is not intended that the scope of the invention be limited to the specific and preferred embodiments illustrated and described. Rather, it is intended that the scope of the invention be determined by the appended claims.

What is claimed is:

1. A user interface for a dial up communications network for accessing an account, conducting a transaction, obtaining a service or obtaining information, said communications network including a user operable terminal for sending and receiving communications at a remote location relative to a provider of the account, transaction, service or information and a gateway service platform for processing and transmitting said communications to and from the user operable terminal and to and from at least one computer associated with the provider of the account, transaction, service or information, said user interface comprising:

said user operable terminal having a user friendly touch screen display of virtual buttons that are changeable in accordance with differing modes of operation of the terminal, said terminal providing instructional prompts enabling the user to operate the terminal, said terminal having an internal processing unit programmed to provide a multiplicity of preprogrammed choices represented by different displays of virtual buttons with respect to the account, transaction, service or information, said multiplicity of preprogrammed choices being perceptible to the user, said terminal being capable of registering the user's input to the terminal corresponding to the user's selection from the multiplicity of preprogrammed choices displayed on the touch screen;

data transmission means for communicating the user's selection registered as the user's input from the multiplicity of preprogrammed choices to the service platform;

data receiving means enabling the touch screen to display data concerning the account, transaction, service or information received from the computer through the service platform in response to the user's selection from the multiplicity of preprogrammed choices;

means for simultaneously displaying on the touch screen the multiplicity of preprogrammed choices and an option selectable by the user to communicate by voice or TDD through the service platform to a representative of the provider with regard to the account, transaction, service or information;

means for maintaining in the processing unit of the terminal a record of dial-up connection numbers associated with a representative of a provider of each account, transaction, service or information displayed that is associated with a voice or TDD option;

means for dialing the dial-up connection number of the representative of the provider in response to user selection of the voice or TDD option; and

means for enabling the user to communicate with the representative of the provider by voice or TDD upon the user's selection of said option said means comprising a switch that upon selection of the voice or TDD option by the user, data communication between the service platform and the terminal is terminated, the dial-up number associated with the provider is dialed and a direct voice or TDD connection between the terminal user and the representative of the provider is initiated.

2. The user interface of claim 1, which further comprises memory means for recording a session log containing the

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sequence of the user's choices from the multiplicity of preprogrammed choices and means for transmitting said session log to the representative of the provider upon the user's selection of the option to communicate by voice or TDD with said representative.

3. The user interface of claim 2, wherein the multiplicity of preprogrammed selections include means for enabling the user to:

enter at least one of the group consisting of a user identification number, a secret code and a service password;

instruct a financial institution to initiate settlement of debits and credits with respect to charges incurred or funds acquired by the user as a result of a transaction with the provider;

request a confirmation number following successful completion of the transaction with the provider; and

repeat the transaction in the event of an interruption or error in the data transmissions or error in the transaction.

4. A method of accessing an account, conducting a transaction, obtaining a service or obtaining information with a user interface for a dial up communications network, said communications network including a user operable dial-up terminal for connecting with and sending and receiving communications at a remote location relative to a provider of the account, transaction, service or information and a gateway service platform for processing and transmitting communications to and from the user operable terminal and to and from at least one computer associated with the provider of the account, transaction, service or information, said method comprising:

providing, on said user operable dial-up terminal a user friendly touch screen display of virtual buttons that are changeable in accordance with differing modes of operation of the terminal;

providing instructional prompts on the screen display enabling the user to operate the terminal;

providing, via programming in an internal processing unit in the terminal, a multiplicity of preprogrammed choices represented by different displays of virtual buttons with respect to the account, transaction, service or information, said multiplicity of preprogrammed choices being perceptible on the touch screen to the user;

registering in the terminal the user's input corresponding to the user's selection from the multiplicity of preprogrammed choices displayed on the touch screen;

communicating to the service platform the user's selection registered as the user's input from the multiplicity of preprogrammed choices;

displaying on the touch screen data concerning the account, transaction, service or information received from the computer through the service platform in response to the user's selection from the multiplicity of preprogrammed choices, said data having been received from the services platform by the terminal;

simultaneously displaying on the touch screen the multiplicity of preprogrammed choices and an option selectable by the user to communicate by voice or TDD through the service platform to a representative of the provider with regard to the user selected account, transaction, service or information;

maintaining in the processing unit of the terminal a record of dial-up connection numbers associated with a rep-

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representative of the provider of each account, transaction, service or information displayed that is associated with a voice or TDD option;

dialing the dial-up number associated with the representative of the provider in response to user selection of said option to communicate by voice or TDD; and
enabling the user to communicate with the representative of the provider by voice or TDD transmission upon the user's selection of said option by terminating data communication between the service platform and the terminal and dialing the dial-up number associated with the provider to initiate a direct voice or TDD connection between the terminal user and the representative of the provider.

5. The method of claim 4, wherein a transaction with a provider of banking services is displayed as a user selectable option and upon the user's selection of a transaction with the provider of banking services further comprises the steps of:

retrieving data comprising the user's accounts and balance information from the banking services provider's computer;

storing said data in the service platform; and

providing the user with access to said data as stored in the service platform.

6. The method of claim 4, wherein a transaction with a provider of bill paying services is a user selectable option and there is maintained in the provider's computer a record of users' accounts and balances in funds maintained by the user and payees of accounts for which the user may receive a bill and upon selection of the bill payer's option, further comprises the steps of:

retrieving data comprising the user's accounts, balances and payees from the provider's computer;

storing said data in the service platform;

providing the user with access to said data as stored in the service platform;

enabling the user to perform at least one of the options from the group comprising:

add, delete or alter a payee;

schedule, reschedule or cancel a future payment;

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make a present payment;

debit an account to fund a payment; and

inquire about a previously made payment.

7. The method of claim 4, wherein user shopping services are a user selectable option and upon selection of a transaction with a provider of shopping services, and the method further comprises steps of:

retrieving data comprising information concerning products and shopping services from the shopping services provider's computer;

storing said data in the service platform;

providing the user with access to said data as stored in the service platform;

enabling the user to view on the screen and select at least one of the options from the group comprising:

browse through product categories,

organize and view said data by type of product, manufacturer or model;

view a portion of said data regarding a selected product; and

place an order for a product.

8. The method of claim 4, wherein travel services are a user selectable option and upon selection of a transaction with a provider of travel services, the method further comprises steps of:

retrieving data from the provider's computer comprising information concerning at least one of the group comprising airline flights, hotels, rental cars, cruises and package vacations;

storing said data in the service platform;

providing the user with access to said data as stored in the service platform;

enabling the user to perform at least one of the options from the group comprising:

view a selected category of information in said data,

make a reservation,

establish a travel profile comprising a seating preference and a frequent flyer number.

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